Complete Summary

GUIDELINE TITLE

Hypertension.

BIBLIOGRAPHIC SOURCE(S)

Singapore Ministry of Health. Hypertension. Singapore: Singapore Ministry of Health; 2005 Jun. 52 p. [103 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Singapore Ministry of Health. Hypertension. Singapore: Singapore Ministry of Health; 2000 Dec. 42 p.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Hypertension

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Risk Assessment
Treatment

CLINICAL SPECIALTY

Cardiology
Family Practice
Internal Medicine
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To assist physicians in clinical decision-making by providing well-balanced information on the management of patients with hypertension, without restricting the physician's individual judgment

TARGET POPULATION

Adults aged 18 years and over with hypertension

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis and Evaluation

1. Blood pressure measurement using mercury sphygmomanometer or other noninvasive measuring devices
2. Home or ambulatory blood pressure monitoring in defined situations
3. Grading of hypertension according to systolic and diastolic blood pressure
4. Clinical evaluation, including clinical and family history; physical examination; laboratory investigations such as urinalysis for blood, protein, glucose, and microscopy; blood chemistry for electrolytes, creatinine, urea, fasting glucose and lipids; and electrocardiography; additional investigations (as indicated); limited echocardiography
5. Assessment of risk factors, target organ damage, and concomitant diseases (e.g., diabetes, cardiovascular or renal disease)

Management

1. Assessment of overall risk profile as guide to management
2. Life style modifications and non-pharmacological therapy, such as smoking cessation, weight reduction, moderation of alcohol consumption, restriction of salt intake, reduction of intake of cholesterol and saturated fats, maintenance of adequate intake of dietary potassium and increased physical activity
3. Patient education on blood pressure and hypertension, risks involved and prognosis, target blood pressure level, expected benefits as well as the risks and side effects of treatment, and lifestyle modification

4. Antihypertensive drugs (monotherapy or combination therapy), such as diuretics, beta-blockers, angiotensin-converting enzyme inhibitors, calcium channel blockers, and angiotensin II receptor antagonists (alpha-blockers, hydralazine, and methyldopa are also considered but are uncommonly used)
5. Follow-up to monitor blood pressure and other risk factors
6. Cholesterol lowering and antiplatelet therapy (aspirin, ticlopidine, clopidogrel) in patients with concomitant risk factors and increased cardiovascular risk
7. Special considerations for treatment of hypertension in patients with type 2 diabetes, pregnant women, and the elderly

MAJOR OUTCOMES CONSIDERED

- Morbidity and mortality due to hypertension
- Achievement of target blood pressure levels
- Incidence of major fatal or non-fatal cardiovascular events (e.g., myocardial infarction and stroke)
- Cost-effectiveness of therapy
- Side effects of therapy

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level Ia: Evidence obtained from meta-analysis of randomised controlled trials

Level Ib: Evidence obtained from at least one randomised controlled trial

Level IIa: Evidence obtained from at least one well-designed controlled study without randomisation

Level IIb: Evidence obtained from at least one other type of well-designed quasi-experimental study

Level III: Evidence obtained from well-designed nonexperimental descriptive studies, such as comparative studies, correlation studies, and case studies

Level IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The first edition of the guidelines on hypertension provided recommendations that were adapted from other international guidelines on hypertension such as the 1999 World Health Organisation (WHO) -- International Society of Hypertension (ISH) Guidelines, the US Joint National Committee VI Report, and the 1999 British Hypertension Society Guidelines and were modified to suit the local situation. An outline of the guidelines was presented at the 1999 Singapore Cardiac Society Annual Scientific Meeting and subsequently further modified and elaborated upon by the workgroup.

In this second edition of the guidelines, recommendations have been updated and adapted from recently published international guidelines on hypertension and modified to suit the local situation. International guidelines used as references for this edition include the US Joint National Committee VII Report, the 2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of hypertension, the 2004 British Hypertension Society Guidelines and the 2003 WHO/ISH statement on management of hypertension.

These guidelines are based on the best available current evidence and expert judgement.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendations

Grade A (evidence levels Ia, Ib): Requires at least one randomised controlled trial, as part of the body of literature of overall good quality and consistency, addressing the specific recommendation

Grade B (evidence levels IIa, IIb, III): Requires availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation

Grade C (evidence level IV): Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates absence of directly applicable clinical studies of good quality

GPP (good practice points): Recommended best practice based on the clinical experience of the guideline development group

COST ANALYSIS

The guideline developer reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The recommendations that follow are those from the guideline's executive summary; detailed recommendations can be found in the original guideline document. Each recommendation is rated based on the level of the evidence and the grades of recommendation. Definitions of the grades of the recommendations (A, B, C, and Good Practice Point [GPP]) and level of the evidence (Level I-Level IV) are presented at the end of the "Major Recommendations" field.

Note from the National Guidelines Clearinghouse (NGC): These guidelines were updated by the developer in June 2005. Following are major changes or additions that have been made to the December 2000 version of the guidelines, followed by a summary of the guidelines. Please refer to the original guideline document for further details.

The following is a list of major changes or additions to the guidelines:

- The ranking of evidence and recommendations has been changed from a format adapted from the American College of Cardiology/American Heart Association to the format based on the Scottish Intercollegiate Guidelines Network that has been adopted in all Ministry of Health Clinical Practice Guidelines.

- Section 3 on definition of high blood pressure has been amended to simplify the classification of blood pressure.
- Section 5 on prognostic factors has been amended to include body mass index (BMI) and microalbuminuria.
- Section 6 on management of hypertension has been amended to correspond to the new classification of hypertension and simplifies treatment decisions.
- Section 8 on principles of drug treatment and section 9 on selection of antihypertensive drugs have been amended to take into account recent clinical trial evidence of the efficacy as well as specific indications of angiotensin converting enzyme inhibitors and angiotensin receptor blockers.
- Annex 1 on treatment of hypertension in diabetes mellitus and Annex 2 on treatment of hypertension in pregnancy have been updated.
- A new Annex 3 on treatment of hypertension in the elderly has been added.
- A new section on self-assessment containing 10 multiple-choice questions has been added.
- The references have been updated to include recent important clinical trial reports.

Definition of High Blood Pressure (BP)

C - Grade hypertension according to systolic and diastolic BP levels. (Grade C, Level IV)

Evaluation of High Blood Pressure

C - Use the following procedures when recording BP (Chobanian, et al., 2003; "1999 World Health Organization-International Society of Hypertension Guidelines," 1999; "Recommendations for routine blood pressure," 1992):

- Allow the patient to sit or lie down for several minutes before measuring the BP.
- The patient should refrain from smoking or ingesting caffeine during the 30 minutes preceding the measurement.
- Use a cuff with a bladder that is 12-13 cm x 35 cm in size, with a larger bladder for fat arms. The bladder within the cuff should encircle at least 80% of the arm.
- Use the disappearance of phase V Korotkoff sounds to measure the diastolic BP.
- Measure the BP in both arms at the first visit.
- Take 2 or more readings separated by 2 minutes. Average these 2 values. If the first 2 readings differ by more than 5 mmHg, additional readings should be obtained and averaged.
- Measure the BP in both the standing and supine position for elderly subjects and diabetic patients.
- Place the sphygmomanometer cuff at heart level, whatever the position of the patient.

(Grade C, Level IV)

C - Persons with an average BP of more than 135/85 mmHg measured at home may be considered to be hypertensive (American Heart Association, 2004). (Grade C, Level IV)

C - Routine clinical evaluation includes:

- Clinical and family history
- Full standard physical examination
- Laboratory investigations, including:
    - urinalysis for blood, protein, glucose and microscopy
    - blood chemistry for electrolytes, creatinine, urea, fasting glucose and lipids
- Electrocardiography (ECG)

(Grade C, Level IV)

Prognostic Factors of Hypertension

B - Decisions about the management of patients with hypertension should not be made based on their BP levels alone, but also on the presence of other risk factors, target organ damage, concomitant disease such as diabetes and cardiovascular or renal disease, as well as other aspects of the patient's individual and medical circumstances (Anderson et al., 1991; Kannel, 1996). (Grade B, Level III)

Management of Hypertension

A - Assess the overall risk profile as a guide to management (Anderson et al., 1991; Pyorala, et al., 1994; Wood et al., 1984; Jackson, 2000; Stamler, Wentworth, & Neaton, 1986; Lewington et al., 2002). (Grade A, Level Ia)

- If high risk

  A - Institute immediate drug treatment for hypertension and other risk factors or conditions present (Julius et al., 2004). (Grade A, Level Ia)

- If medium risk

  A - Monitor BP and other risk factors for several weeks and obtain further information before deciding whether to institute drug treatment (Hansson et al., 1998). (Grade A, Level Ib)

- If low risk

  A - Observe the patient over a significant period of time before deciding whether to institute drug treatment (Hansson et al., 1998). (Grade A, Level Ib)

B - Lifestyle modifications and non-pharmacological measures should be instituted wherever appropriate in all hypertensive patients, including those who require drug treatment or those within the high normal BP range. (Grade B, Level IIa)

Treatment Goals and Follow Up

A - In diabetic subjects and those with chronic renal disease, the target BP should be a "normal" BP (i.e., <130/80 mmHg). In elderly patients, the target BP should be at least "high-normal" BP (i.e., <140/90 mmHg), provided no orthostatic hypotension occurs (Hansson et al., 1998; United Kingdom Prospective Diabetes Study [UKPDS] Group, 1999). (Grade A, Level Ia)

Principles of Drug Treatment

A - Use appropriate drug combinations to achieve target BP levels if this cannot be achieved by one single antihypertensive agent (Law et al., 2003; Morgan & Anderson, 2002). (Grade A, Level Ib)

A - Use of appropriate drug combinations enables BP lowering efficacy to be maximized while minimizing side effects. In most patients, appropriate combination therapy produces BP reductions that are twice as great as those obtained with monotherapy (e.g., reductions in BP increasing from 12 to 22 mmHg systolic BP and from 7 to 14 mmHg diastolic BP in patients with an initial BP of 160/100 mmHg) (Law et al., 2003; Morgan & Anderson, 2002). (Grade A, Level Ib)

A - In patients whose pretreatment BP is moderately elevated (e.g., BP $\geq$160/100 mmHg) or especially if it is severely elevated (e.g. BP $\geq$180/110 mmHg), it may be appropriate to begin with combination therapy, because many such patients will require 2 or even 3 drugs for adequate BP control (Law et al., 2003; Morgan & Anderson, 2002; Neutel et al., 2004). (Grade A, Level Ib)

A - Use long-acting drugs providing 24-hour efficacy on a once daily basis (Parati et al., 1987). (Grade A, Level Ib)

Cost-Effectiveness and Choice of Antihypertensive Drugs

A - Consider any compelling indications and contraindications for an antihypertensive agent when prescribing its use. (See Table 6 in original guideline document). (Grade A, Level Ib)

A - In hypertensive patients who do not have compelling indications or contraindications for any particular drug, any of the 5 main classes of drugs can be considered as the initial therapy (Turnbull, 2003; Dahlof, et al., 2002; Materson et al., 1993). (Grade A, Level Ib)

C - The cost of therapy should be considered in the choice of antihypertensive medication (2003 European Society of Hypertension-European Society of Cardiology guidelines, 2003). (Grade C, Level IV)

C - Generic formulations usually cost less than nongeneric newer drugs and are acceptable if they meet prescribed standards of quality (Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 2004). (Grade C, Level IV)

B - Diuretics and beta-blockers may be selected as initial therapy in patients with uncomplicated hypertension if there are no compelling indications for a particular

class of antihypertensive agents (Alonso Moreno et al., 1998). (Grade B, Level III)

A - Diuretics and beta-blockers should be used with caution in patients at risk of developing diabetes (Lindholm et al., 2003). (Grade A, Level Ib)

A - Effective drug combinations to treat hypertension are: (Law et al., 2003)

- Diuretic and beta-blocker (Law et al., 2003)
- Diuretic and angiotensin converting enzyme (ACE) inhibitor (Law et al., 2003) or angiotensin II receptor blocker (Dahlof et al., 2002)
- Diuretic and calcium channel blocker (Lacourciere et al., 1995)
- Calcium channel blocker (dihydropyridine) and beta-blocker (Mettimano et al,, 2000)
- Calcium channel blocker and ACE inhibitor (Chrysant & Bakris, 2004) or angiotensin II receptor blocker (Morgan & Anderson, 2002)

(Grade A, Level Ib)

A - Although effective for lowering BP, the combination of a diuretic and a beta-blocker may increase the risk of developing diabetes mellitus. Therefore, it should be used with caution in patients who already have risk factors for diabetes mellitus, such as obesity or the metabolic syndrome (Lindholm et al., 2003). (Grade A, Level Ib)

A - Consider the use of other drugs that reduce cardiovascular risk, such as lipid lowering agents and antiplatelet agents, in patients with concomitant risk factors and increased cardiovascular risk (Hannson et al., 1998; Sever et al., 2003). (Grade A, Level Ib)

C - Process Indicators and Recommended Frequency (Chobianian, 2003; 2003 European Society of Hypertension-European Society of Cardiology guidelines, 2003; Williams et al., 2004; "1999 World Health Organization-International Society of Hypertension Guidelines," 1999)

Performance Parameter	Recommended Review frequency
Risk level* - Normal risk - Low and medium risk - High risk	 Annually 6 monthly 3 monthly
• Weight • Fasting blood glucose • Fasting lipid profile • Serum electrolyte, urea and creatinine • Urinalysis	Annually or more frequently according to individual risk factor profile

Performance Parameter	Recommended Review frequency
ECG	Annually or more frequently according to cardiac status
Patient education* - Normal risk - Low and medium risk - High risk	At diagnosis and regular intervals according to risk level Annually 6 monthly 3 monthly

* Goal blood pressure achieved.

Grade C, Level IV

Treatment of Hypertension in Type 2 Diabetes

A - People with diabetes who are hypertensive should be treated to target BP of <130/<80 mmHg. (Grade A, Level Ia)

A - There is inadequate evidence to recommend a specific initial antihypertensive agent for the treatment of hypertension in patients with diabetes. However, in those patients with incipient or overt nephropathy, the use of an agent which inhibits the renin-angiotensin-aldosterone axis should be considered. (Grade A, Level Ia)

Treatment of Hypertension During Pregnancy

C - BP levels of >170/110 mmHg should be lowered to protect the mother against the risk of stroke or to permit possible prolongation of the pregnancy and thereby improve fetal maturity. Opinion is divided on the need for drug treatment for BP readings below this level (National Institutes of Health, 2000). (Grade C, Level IV)

B - Drugs that should be avoided during pregnancy include: ACE inhibitors (associated with possible adverse foetal effects) and angiotensin receptor blockers, the effects of which may be similar to those of ACE inhibitors. Diuretics are also used infrequently because of concerns about reduction of the already compromised plasma volume (Hannsens et al., 1991; Sibai, Grossman, & Grossman, 1984). (Grade B, Level IIb)

Treatment of Hypertension in the Elderly

A - In general the treatment of hypertension in the elderly should follow the same general guidelines but drug therapy should be instituted gradually especially in the frail elderly. On initiating drug therapy the patients' associated clinical conditions should be taken into consideration (Brenner et al., 2001; "Major outcomes in high-risk," 2002; Hansson et al., 1999; Gong et al., 1996; Liu et al., 1998). (Grade A, Level Ia)

B - All 5 classes of drugs (diuretics, beta-blockers, calcium channel blockers, ACE inhibitors, and angiotensin II receptor blockers) have been shown in trials to be efficacious and beneficial in the elderly (Brenner et al., 2001; "Major outcomes in high-risk," 2002; Hansson et al., 1999; Gong et al., 1996; Liu et al., 1998; Lithell et al., 2003). In isolated systolic hypertension, diuretics, calcium channel blockers, ACE inhibitors, and angiotensin II receptor blockers are all useful, and may be used. (Grade B, Level IIa)

GPP - Monitoring of BP in the elderly should include frequent measurements in the erect position to assess postural drop. Care should also be taken to avoid fluid depletion and electrolyte imbalance in the elderly. (GPP)

Definitions:

Grades of Recommendations

Grade A (evidence levels Ia, Ib): Requires at least one randomised controlled trial, as part of the body of literature of overall good quality and consistency, addressing the specific recommendation

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Level III: Evidence obtained from well-designed nonexperimental descriptive studies, such as comparative studies, correlation studies, and case studies

Level IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- The randomised trials conducted to date have shown clear evidence of a lower incidence of major cardiovascular disease events after high blood pressure was treated with antihypertensive drugs. There is as yet no evidence that the main benefit of treating hypertension is due to a particular drug property rather than to lowering blood pressure per se.
- From the results of randomised controlled trials, it appears that each reduction of 10 to 14 mmHg in systolic blood pressure and 5 to 6 mmHg in diastolic blood pressure confers about two-fifths reduction in stroke, one-sixth reduction in coronary heart disease and, in Western populations, one-third reduction in major cardiovascular events.
- There are no data which suggest that this effect of lowering blood pressure is significantly different in Asian populations.
- In patients with Grade 1 hypertension, monotherapy with most agents will produce reductions in systolic/diastolic blood pressure of about 10/5 mmHg. In patients with higher grades of hypertension, it is possible to achieve sustained blood pressure reductions of 20/10 mmHg or more, particularly if combination drug therapy is used.
- The 1999 World Health Organization/Internal Society of Hypertension guidelines estimated the absolute effects of such blood pressure reductions on cardiovascular disease risks (fatal plus nonfatal stroke or myocardial infarction) (See Table 7 in original guideline document). The estimated absolute treatment benefits will range from less than 5 events prevented per thousand patient years of treatment (low risk) to more than 17 events prevented per thousand patient years of treatment (very high risk).
- The absolute benefits for stroke and coronary heart disease are greater than the absolute benefits for congestive heart failure and renal disease.
- These estimates of benefits are based on relative risk reductions observed in trials of about 5 years duration. Long-term treatment over decades could produce large risk reductions.

POTENTIAL HARMS

- Antihypertensive drugs can cause side effects.

- Atenolol is associated with foetal growth retardation when used long term throughout pregnancy.

CONTRAINDICATIONS

CONTRAINDICATIONS

- Calcium channel blockers are contraindicated in patients with heart failure or heart block.
- Beta blockers are contraindicated in patients with asthma and chronic obstructive pulmonary disease or heart block.
- Diuretics are contraindicated in patients with gout.
- Angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers are contraindicated in patients with bilateral renal artery stenosis.
- Drugs that should be avoided during pregnancy include: ACE inhibitors (associated with possible adverse foetal effects) and angiotensin receptor blockers, the effects of which may be similar to those of ACE inhibitors. Diuretics are also used infrequently due to concern about reduction of the already compromised plasma volume.

QUALIFYING STATEMENTS

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- These guidelines are not intended to serve as a standard of medical care. Standards of medical care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge advances and patterns of care evolve.
- The contents of this document are guidelines to clinical practice, based on the best available evidence at the time of development. Adherence to these guidelines may not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care. Each physician is ultimately responsible for the management of his/her unique patient in the light of the clinical data presented by the patient and the diagnostic and treatment options available.
- These guidelines do not address the problem of hypertensive emergencies, such as hypertensive cerebral haemorrhage, which are better managed in specialized facilities by the appropriate specialists.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Quality Indicators for Hypertension Management

The target blood pressure treatment levels are:

- Blood pressure <140/<90 mmHg in all patients except
- Blood pressure <130/<80 mmHg in patients with diabetes or chronic renal disease

Process Indicators and Recommended Frequency

Performance Parameter	Recommended review frequency
Risk level* - Normal risk - Low and medium risk - High risk	 Annually 6 monthly 3 monthly
• Weight • Fasting blood glucose • Fasting lipid profile • Serum electrolyte, urea and creatinine • Urinalysis	Annually or more frequently according to individual risk factor profile
ECG	Annually or more frequently according to cardiac status
Patient education* - Normal risk - Low and medium risk - High risk	At diagnosis and regular intervals according to risk level Annually 6 monthly 3 monthly

* Goal blood pressure achieved.

IMPLEMENTATION TOOLS

Audit Criteria/Indicators
Personal Digital Assistant (PDA) Downloads
Quick Reference Guides/Physician Guides
Staff Training/Competency Material

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Singapore Ministry of Health. Hypertension. Singapore: Singapore Ministry of Health; 2005 Jun. 52 p. [103 references]

ADAPTATION

These guidelines provide recommendations that were adapted from other international guidelines on hypertension and modified to suit the local situation. International guidelines used as references include the US Joint National Committee VII Report, the 2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of hypertension, the 2004 British Hypertension Society Guidelines, and the 2003 World-Health Organisation-International Society of Hypertension (WHO/ISH) statement on management of hypertension.

DATE RELEASED

2000 Dec (revised 2005 Jun)

GUIDELINE DEVELOPER(S)

Singapore Ministry of Health - National Government Agency [Non-U.S.]

GUIDELINE DEVELOPER COMMENT

These guidelines on hypertension have been developed by a workgroup appointed by the Joint Cardiovascular Working Committee of the Singapore National Committee on Cardiac Care and the Singapore Cardiac Society.

SOURCE(S) OF FUNDING

Singapore Ministry of Health

GUIDELINE COMMITTEE

Workgroup on Hypertension

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Singapore Ministry of Health. Hypertension. Singapore: Singapore Ministry of Health; 2000 Dec. 42 p.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Singapore Ministry of Health Web site.

Print copies: Available from the Singapore Ministry of Health, College of Medicine Building, Mezzanine Floor 16 College Rd, Singapore 169854.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Hypertension clinical practice guideline. Available for personal digital assistant (PDA) download in ISilo and MsReader formats from the Singapore Ministry of Health Web site.
- Hypertension summary card. Available in Portable Document Format (PDF) from the Singapore Ministry of Health Web site. Also available for personal digital assistant (PDA) download in ISilo and MsReader formats.

Audit criteria and a continuing medical education (CME) self assessment are available in the original guideline document.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on October 25, 2001. The information was verified by the guideline developer on November 16, 2001. This NGC summary was updated by ECRI on September 7, 2005.

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DISCLAIMER

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